

AFANAS'YEV, D.Ya.; BARBARICH, A.I.[Barbarych, A.I.]; ZEROV, D.K.; akad.;
KLOKOV, M.V.; OKSIYUK, P.F.[deceased]; SHCHITKOVS'KAYA,
V.L.[Shchitkivs'ka, V.L.]; BILOSHTAN, A.P., red.-
leksikograf; SKUTSKAYA, N.P.[Skuts'ka, N.P.], red.;
KADASHEVICH, O.O.[Kadashevych, O.O.], tekhn. red.

[Russian-Ukrainian dictionary of botanical terminology and
nomenclature] Ros'is'ko-ukrains'kyi slovnyk botanichnoi
terminologii i nomenklatury. Kyiv, Vyd-vo Akad. nauk USRS,
1962. 340 p. (MIRA 16:4)

1. Akademiya nauk Ukr. SSR (for Zerov).
(Botany--Dictionaries)
(Russian language--Dictionaries--Ukrainian)

LUPINOVICH, I.S., professor; SHCHITNIKOV, P.I., inzhener.

Drainage and cultivation of swamps and swampy soils in the
Polesye Lowland. Trudy Inst.mel.,vod.i bol.khoz.AN BSSR 6:
3-20 '55. (MLRA 9:10)

1. Deystvitel'nyy chlen AN BSSR (for Lupinovich) 2. Direktor
Belgiprovodkhoza. (for Shchitnikov).
(Polesye--Drainage) (Polesye--Swamps)

PAVLOVSKIY, Aleksandr Alekseyevich [Paulouski, A.A.], kand.tekhn.nauk;
SHCHITNIKOV, P.I. [Shchytnikau, P.I.], inzh.-gidrotekhnik, nauchnyy
red.; KOROLZVICH, M.A. [Karalevich, M.A.], red.; VOROTINSKAYA,
S.A. [Varatynskaia, S.A.], tekhn.red.

[Using hydraulic machinery in the drainage of White Russian swamps]
Gidramekhanizatsiya na asushal'nykh rabotakh u BSSR. Minsk, 1959.
23 p. (Tavarystva pa raspasiudzhvanniu palitychnykh i navukovykh
vedau Belaruskai SSR. Seryia pryrodaznauchanavukovaia, no.14).
(MIRA 13:4)

(White Russia--Hydraulic engineering)

SHCHITNIKOV, P.I., inzh. (g.Minsk)

Drainage and reclamation of water-logged lands in Polesye.
Gidr. i mel. 13 no.3:48-55 Mr '61. (MIRA 14:8)
(Polesye--Drainage)

SHCHITNIKOV, Petr Ivanovich; RYABCHIKOV, N.L., red.; ZUYKOVA, V.I.,
tekhn. red.

[Land improvement in the current seven-year plan]Melio-
ratsiia v tekushchem semiletii. Minsk, Gos.izd-vo sel'-
khoz. lit-ry BSSR, 1962. 32 p. (MIRA 15:11)
(White Russia--Drainage)

ACCESSION NR: AR4023750

S/0274/64/000/001/A055/A055

SOURCE: RZh. Radiotekhnika i elektrosvyaz', Abs. 1A352

AUTHORS: Ignat'yev, G. F.; Shchitnikov, Sh. I.

TITLE: Verification of antenna phase diagram

CITED SOURCE: Izv. Tomskogo politekhn. in-ta, v. 116, 1962, 87-89

TOPIC TAGS: antenna, long wave antenna, medium wave antenna, ell shaped antenna, antenna phase diagram, antenna phase directivity, phase diagram measurement

TRANSLATION: A method is proposed for checking the influence of the capacitive load of a medium-wave and long-wave L-shaped antenna on the phase directivity diagram. The method consists of comparing the phase diagram of the antenna with that of a vertical radiator. The investigated antenna is constructed in such a way that it is possible

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to remove the horizontal part, leaving the vertical radiator in the center. The diagram of the antenna is compared with the phase diagram of this radiator. Measurements of the phase are carried out using a passive reflector and a phase-measuring device. One illustration. B. P.

DATE ACQ: 03Mar64

SUB CODE: GE, SP

ENCL: 00

Card 2/2

ACCESSION NR: AR4032182

S/0058/64/000/002/H016/H017

SOURCE: Ref. zh. Fiz., Abs. 2Zh107

AUTHOR: Shchitnikov, Sh. I.

TITLE: On the distortion of the phase diagram of a vertical radiator, due to its inaccurate installation

CITED SOURCE: Tr. Tomskogo in-ta radioelektron. i elektron. tekhn., v. 1, 1963, 27-32

TOPIC TAGS: vertical radiator, vertical antenna, phase diagram distortion, phase diagram, amplitude diagram, deviation from circular diagram, tilting error

TRANSLATION: A theoretical calculation is made of the distortion of the amplitude and phase directivity pattern of a vertical radiator as a result of its not being strictly perpendicular, something which

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is essential in phase and angle-measuring radio-navigation systems. The problem is solved under the assumption that the radiator is located on an ideally conducting plane, and that its angle of inclination is equal to γ . Expressions are obtained for the field intensity of a vertical dipole for different values of γ . It is shown that: (1) for small γ the amplitude diagram in polar coordinates is a circle, as in the case of the vertical radiator; (2) when the length of the radiator becomes comparable with the wavelength, the distortions of the phase diagram are of the order of γ . The maximum deviation of the phase diagram from a circle is

$$\psi_{\max} = (kl - \sin kl) \cdot \gamma / [2\sin^2(kl/2)]$$

where k is $2\pi/\lambda$, l -- length of the radiator; (3) when $l \ll \lambda$ and for small γ , the distortions of the phase diagram are much smaller than the slope of the radiator and can be disregarded under the condition that the phase accuracy of the entire measuring assembly is

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smaller than the indicated distortions. V. Medvedev.

DATE ACQ: 31Mar64

SUB CODE: GE, SP

ENCL: 00

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L 47353-65 EWP(k)/EWT(1)/I Pf-4/P1-4

ACCESSION NR: AR5009725

UR/0058/65/000/002/H063/H063

SOURCE: Ref. zh. Fizika, Abs. 2Zh418

AUTHOR: Shchitnikov, Sh. I.

TITLE: Phase method of determining the speed of ultrasound

CITED SOURCE: Tr. Tomskogo in-ta radioelektron. i elektron. tekhn.,
v. 2, 1964, 30-32

TOPIC TAGS: ultrasound, ultrasound speed, phase method, sound speed
measurement

TRANSLATION: The phase method of measuring the speed of ultrasound is considered in general outline. It is possible to determine the speed of sound in a medium by measuring the phase difference arising between the radiated and received signals because of the finite propagation time of the ultrasonic wave. A high measurement accuracy

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is obtained by raising the operating frequency; an instrument used to measure the speed of ultrasound can be easily coupled with automatic control equipment, since it generates a voltage or a current proportional to the phase shift. In the control of manufacturing processes, the range of variation of the speeds is usually small, and the use of the phase method is advantageous because of the simplicity of such instruments. In the case of a wide range of speed variation, the instrument readings may become ambiguous, but then it is possible to use a supplementary coarser measurement of the speed of sound at a lower frequency and therefore with a larger uniqueness range. It is proposed to eliminate the accompanying difficulty of transmitting and receiving two signals with large frequency difference by modulating the high frequency with the lower one. The exact speed of sound is then determined by the phase shift of the carrier oscillation, while the coarse measurement is based on the phase shift of the envelope.

V. Baranov.

SUB CODE: GP

ENCL: 00

Card 2/2 CC

SHCHITNIKOV, V. K.

"Influence of a Body Shape on Heat Transfer in a Forced
Air Flow."

Report submitted for the Conference on Heat and Mass Transfer,
Minsk, BSSR, June 1961.

10.4100

S/170/61/004/006/007/015
B129/B212

11.9200

AUTHOR: Shchitnikov, V. K.

TITLE: Experimental investigation of the heat transfer of a sphere
in a turbulent air flow

PERIODICAL: Inzhenerno-fizicheskiy zhurnal, v. 4, no. 6, 1961, 78-82

TEXT: Results are given on the experimental examination of the convective heat transfer of a sphere in a turbulent air flow for the Reynold numbers ranging from $1.5 \cdot 10^4$ to 10^5 and a degree of turbulence of 2.4% of the incident flow. The results obtained are compared with those of other authors. For technical calculations of the methods of chemical technology, energetics, drying technique, and thermal treatment it is necessary to know the total heat transfer coefficients for bodies of various shapes in a forced air flow. Even though there is a lot of material in literature about determining experimentally the convective heat transfer for bodies of any shape it is very difficult to generalize these results. The author reports on his test results, which he had obtained with a closed-type wind

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Experimental investigation of...

channel (Fig. 1) having a cross section of 500×500 mm. Fins were used to stabilize the flow. The nonuniformity of the mean velocity across more than 80% of the cross section did not exceed the flow velocity along the axis by more than 1.0 to 1.5%. A combined Pitot-Prandtl tube was used in connection with a micro-pressure gauge to determine the dynamic flow pressure in the wind channel. An electric heater heated the air. The temperature of the air flow was kept constant to $\pm 0.1^\circ\text{C}$. The test specimen consisted of a sphere made of 1.5 mm thick copper plate and a diameter of 120 mm. A coil in the inside of the sphere transported the coolant (water). 12 copper-constantan thermocouples were used to measure the temperature of the outer surface of the sphere. The measurements were done during the tests for stable thermal and dynamic conditions. The air temperature was varied between 60 and 140°C and the air velocity between 2.5 and 18 m/sec. In all tests the temperature on the surface of the sphere was kept constant at $32.7 \pm 0.3^\circ\text{C}$. The critical function $Nu = f(Re)$ represents the test results (Fig. 3). The maximum error of measurement for the convective heat transfer coefficient was 4%. The data of the heat transfer for the sphere in an air flow, which the author

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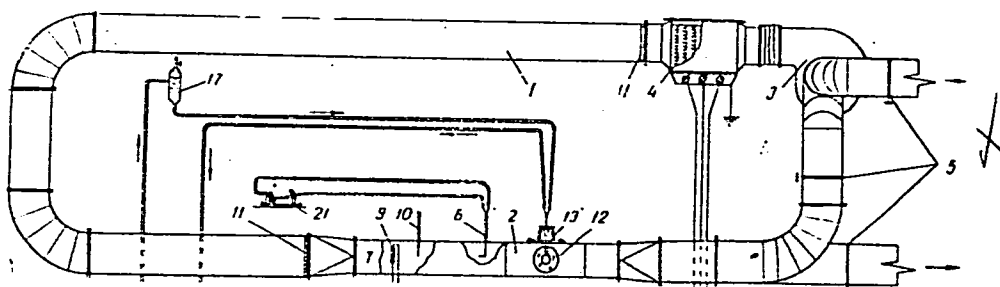
Experimental investigation of...

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B129/B212

obtained agreed with those of other authors. There are 3 figures and 7 references: 5 Soviet-bloc and 2 non-Soviet-bloc. The reference to English-language publications reads as follows: Mc Adams, W. H. Heat Transmission, 3 rd., New York, 1954. Yuge. Paper. Amer. Soc. Mech. Engrs. No. A-123,7, 1959.

ASSOCIATION: Institut energetiki AN BSSR (Institute of Power Engineering of the AS BSSR)

SUBMITTED: March 6, 1961



Card 3/6

25563
S/170/61/004/008/013/016
B125/B201

10.3400
26.5200

AUTHOR:

Shchitnikov, V. K.

TITLE:

Effect of shape upon the process of external heat exchange
in forced convection

PERIODICAL: Inzhenerno-fizicheskiy zhurnal, v. 4, no. 8, 1961, 117 - 120

TEXT: The author wanted to clarify the effect of the shape of a body upon the process of "pure" heat exchange with a turbulent air current; the conclusions drawn here are based on experimental data found and published by him earlier (IFZh no. 6, no. 7, 1961). In the original representation, the experimental results were used in a dimensionless form, taking account of generally assumed dimensions (of diameter for sphere, cylinder, and disk, of the length of the oncoming flow for plate and membrane, slant height of cone). With such a choice of characteristic dimensions it is, however, not possible to determine the effect of shape upon the heat exchange. Under otherwise equal conditions, also the characteristic dimensions of a body have, in addition to its shape, an effect upon the final results. To find out clearly the spread of

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experimental data as a function of the body shape only, a characteristic dimension being the same for all models is suitably used. In the present paper, this is \sqrt{F} , F being the area of active heat exchange of the test body. The surface area of all bodies examined here was 0.0452 m². Fig. 1a illustrates the experimental results found using a uniform characteristic dimension. The most effective heat exchange surface is the cylinder (with the flow coming from the front surface, \bar{B}), followed by sphere, plate (with longitudinal flow about it, A), cylinder (with transverse flow about it, A), disk (with longitudinal flow about it, \bar{B}), cone (with the base toward the flow, \bar{B}), plate (with transverse position in the flow, \bar{B}), cone (with the vertex toward the flow, A), and the least effective of all is the disk curve (with transverse position in the flow, A). In practice, the most convenient treatment of the problem would be defining such a characteristic dimension as would allow all data on heat exchange to be generalized to a relation being uniform for all configurations. Such a characteristic dimension would simultaneously take account of the body's shape and orientation in the air current. The author suggests using \sqrt{F} , l' (length of flow about the body) and F/P_{mean} (ratio of total surface area versus diameter of mean cross section).

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Checking this suggestion in connection with the conditions for a "pure" heat exchange examined here would be of great interest. Evaluation of the experimental data yields a spread of $\pm 32\%$ for \sqrt{F} as the characteristic dimension. A pronounced resemblance among the processes is found only in case of a cylinder with any orientation, and in case of a sphere and a plate (with longitudinal flow about them). These bodies exhibit only a uniform dependence with a relative deviation of $\pm 10\%$. The choice of F/P_{mean} as the characteristic dimension is probably more correct than that of \sqrt{F} , but the data evaluated by this method would provide a greater relative spread of points. The use of \sqrt{F} , l' and F/l_{mean} as characteristic dimensions when generalizing the experimental data of a single criterional relation does not lead to positive results due to the considerable deviation of the experimental data. Much better results for all models concerned are provided by the characteristic dimension P_{mean}/τ (reduced diameter with respect to the mean cross section). Fig. 2 shows diagrams of experimental data in this treatment. The spread of points is not eliminated in this case either, but it is small compared with other methods of evaluation. The entire group of bodies concerned

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can be summarizingly described by a relation of the form $Nu_f = 0.125 Re_f^{0.67}$ (2), with the exception of the cone (with the vertex toward the flow) and the disk placed transversally to the flow. The maximum deviation of experimental data from the averaged curve is $\pm (17 - 18) \%$. The expressions (1) and (2) found here are valid in the interval of Reynolds numbers 10^4 to $1.5 \cdot 10^5$ and with a turbulence degree of 2.4 % of the oncoming flow. There are 2 figures and 8 references: 5 Soviet-bloc and 3 non-Soviet-bloc. The two references to English-language publications read as follows: Powell R. W. Trans. Inst. Chem. Engrs., t. 18, 36/50, 1940; Pasternak I. S. and Gauvin W. H. The Canadian Journal O. A. Chemical Engineering, v. 38, no. 2, 1960.

ASSOCIATION: Institut energetiki AN BSSR, g. Minsk (Institute of Power Engineering, AS BSSR, Minsk)

SUBMITTED: April 25, 1961

Card 4/6

L 8926-66

EWT(1)/EWP(m)/ETC/EPF(n)-2/ENG(m)/EWA(d)/ECS(k)/EWA(1) WW/GS

ACC NRP

AT5027196

UR/0000/65/000/000/0086/0111

AUTHOR: Shchitnikov, V. K.

ORG: Heat and Mass Transfer Institute AN BSSR, Minsk (Institut teplo- i massoobmena AN BSSR)

TITLE: Heat transfer between bodies of different shapes with a turbulent flow of air

SOURCE: AN BSSR. Institut teplo- i massoobmena. Teplo- i massoobmen tel a okruzhayushchey gazovoy sredoy (Heat and mass exchange of bodies with the surrounding gaseous medium). Minsk, Nauka i Tekhnika, 1965, 86-111

TOPIC TAGS: heat transfer, boundary layer theory, similarity theory, turbulent flow

ABSTRACT: The article gives the results of an experimental investigation of convective heat transfer between a sphere, a cylinder, a cone, a disc, a slab, and a plate and a stream of turbulent air, including the effect of the orientation of the body in the air stream. The experiments were made under identical thermal and hydrodynamic conditions, at Reynolds numbers from 10^4 to 1.5×10^5 . The degree of

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turbulence was 2.4%. The experimental bodies were made of sheet copper 0.0015 meters thick with their dimensions given in a table. The results were correlated by similarity theory, starting from the known differential equations:

$$\begin{aligned} \mathbf{V}, \text{grad } t &= a \nabla^2 t; \\ \rho (\mathbf{V} \text{grad}) \mathbf{V} &= -\text{grad } P + \mu \nabla^2 \mathbf{V}; \\ \text{div } \mathbf{V} &= 0. \end{aligned} \quad (3)$$

The boundary conditions were:

$$\begin{aligned} V_n &= 0; \quad V_t = V_t(x); \\ \lambda (\text{grad } t)_n + a(t_f - t_n) &= 0. \end{aligned} \quad (4)$$

The dimensionless relationships were obtained in the conventional form:

$$\text{Nu} = C \text{Re}^a. \quad (5)$$

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The relationships obtained in this form by generalization of the experimental data were as follows: for the sphere - Equation 16; for a cylinder with its axis parallel to the axis of flow - Equation 17; for a cylinder with its axis perpendicular to the axis of flow - Equation 18; for a cone with its apex facing the direction of the flow - Equation 20; for a cone with its base toward the flow direction - Equation 22; for a disc placed in a transverse position - Equation 23; for longitudinal flow around a disc - Equation 24; for longitudinal flow around a slab - Equation 25; for a slab placed in a transverse position - Equation 26; and, for an infinite plate - Equation 27.

$$Nu_f = 0,19 Re_f^{0,64} \quad (16)$$

$$Nu_f = 0,123 Re_f^{0,68} \quad (17)$$

$$Nu_f = 0,118 Re_f^{0,67} \quad (18)$$

$$Nu_f = 0,128 Re_f^{0,65} \quad (20)$$

$$Nu_f = 0,057 Re_f^{0,74} \quad (22)$$

$$Nu_f = 0,028 Re_f^{0,77} \quad (23)$$

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$$Nu_f = 0,017 Re_f^{0,86} \quad (24)$$

$$Nu_f = 0,107 Re_f^{0,7} \quad (25)$$

$$Nu_f = 0,29 Re_f^{0,58} \quad (26)$$

$$Nu_f = 0,031 Re_f^{0,8} \quad (27)$$

Values of the resistance coefficients for all the shapes are exhibited in a table. Analysis showed that, with the exception of the cone with its apex toward the flow and the disc placed in a transverse direction, all the experimental data could be correlated by the general expression:

Maximum deviation from the averaged curve did not exceed $\pm 18\%$.
Orig. art. has: 29 formulas, 14 figures, and 1 table.

SUB CODE: ME, GC/ SUM DATE: 02Jul65/ ORIG REF: 017/ OTH REF: 013

CC

Card 4/4

SUCHITNIKOV, V.K.

Heat exchange between solids of different shapes and a forced
liquid flow. Inzh.fiz.zhur. 4 no.7:73-78 JI '61. (MIRA 14:8)

1. Institut energetiki AN BSSR, Minsk.
(Heat—Transmission) (Hydrodynamics)

SHCHITOV, A. S.

USSR/Geophysics - Snow

Aug 53

"Penitent Snow," A. S. Shchitov, Stavropol' Pedagog
Inst

Priroda, No 8, pp 110-111

Describes the unusual phenomenon, in Stavropol', of
"kayushchiysya sneg" [Penitent Snow] the terminology
for which is taken from the Spanish "nieves penit-
entes" or "nieve de los penitentes." This is snow
which has melted down and formed figures which, at
a distance, resemble penitent people bending over
with veils on their shoulders.

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SHCHITOV, A. S.

USSR/Meteorology

Card 1/1 : Pub. 36 - 15/34

Authors : Bobrov, V. Ya., and Shchitov, A. S.

Title : About one of the reasons for the arid winds in western approaches of the Caucasus

Periodical : Priroda 1, 95-96, Jan 1954

Abstract : Meteorological data are presented which offer a general explanation of the reasons for the arid, sometimes even warm, low winds usually encountered in the month of March in the western approaches of the Caucasus Mountains in the USSR. Weather chart, corresponding to the maximum development of such arid wind, is included.

Institution : The Hydrometeorological Bureau, Stavropol

Submitted :

SHCHITOV, G.

Mechanized plastering of facades. Zhil.-kom. khoz. 11 no.7:16,18,
19,21 J1 '61. (MIRA 14:7)

1. Glavnyy inzh. Tresta otdelochnykh rabot Upravleniya kapital'nogo
remonta zhilykh domov Mosgorispolkoma.
(Facades) (Plastering)

DUL'KIN, I.M.; SHCHITOV, G.K.; KLOCHANOV, P.N., inzh., nauchnyy red.;
ZVORYKINA, L.N., red.izd-va; KASIMOV, D.Ya., tekhn.red.

[Repairing and finishing facades of buildings in winter]
Remont i otdelka fasadov zdaniy v zimnikh usloviakh. Moskva,
Gos.izd-vo lit-ry po stroit., arkhitekt. i stroit.materialam,
1961. 68 p. (MIRA 15:2)
(Buildings--Repair and reconstruction)

SHCHITOV, G.K., inzh.

Doing exterior finishing work in winter. Gor.khoz.Mosk. 36
no.2:14-16 F '62. (MIRA 16:2)
(Plastering--Cold weather conditions)

SHCHUKIN, P.V., inzh.; SHCHITOV, I.A., inzh.

Device for the removal of discs from the shafts of ShMA and ShMT
shaft mills. Energetik 10 no.2:13-14 F '62. (MIRA 15:2)
(Milling machinery--Maintenance and repair)

USSR/chemistry - Oxidants, Fuels, Pro- 21 Dec 51
pellants

"Mechanism of the Nitration of Paraffins and
Cycloparaffins With Nitrogen Pentoxide," A. I.
Titov, I. V. Shchitov

"Dok Ak Nauk SSSR" Vol LXXXI, No 6, pp 1085-1088

N_2O_5 reacts with the paraffin chain in an inert
solvent at temps below 0 to form alkyl nitrates,
nitroalkanes, and carboxylic acids. According
to the authors' theory, the paraffin loses a
hydrogen atom to form a free alkyl group upon the

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action of a suitable agent. This agent, the NO_3
group arising from the equil disocn $\text{N}_2\text{O}_5 \rightleftharpoons \text{NO}_2 +$
 NO_3 , is more active than NO_2 . NO_2 has an inhibit-
ing influence on the rate of the reaction. Ni-
tration of n-octane at 0° yielded sec-octane and
n-octyl nitrate.

SHCHITOV, I.V.

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GARKALENKO, I.A.; SHCHITOV, N.A.

Selection of optimal velocities in the registration of the gamma-gamma logging curve. Geofiz.sbor. no.2:115-117 '62. (MIRA 16:3)

1. Dnepropetrovskaya geofizicheskaya ekspeditsiya tresta "Ukrgeofizrazvedka". (Radioactive prospecting)

SHCHITOV, N.A.

Amplifying attachment to the EP-1 potentiometer. Sbor.luch.
rats.predl. pt. 2:9-10 '63.

Key for the simultaneous closing of contacts in the EP-1
potentiometer. Ibid.:10-11

Electric prospecting instrument for measuring the ratio .
Ibid.:11-13 (MIRA 17:5)

1. Dnepropetrovskaya geofizicheskaya ekspeditsiya.

SHCHITOV, N.A.; KUKURUZA, V.D.

Processing tellurograms using rectilinear analogies. Sbor.luch.
rats. predl. pt. 2:17-18 '63. (MIRA 17:5)

1. Dnepropetrovskaya geofizicheskaya ekspeditsiya.

SECRET
KOGAN, A.B.; ~~SHCHITOV, S.I.~~; KULAYEV, B.S., redaktor; STREL'NIKOVA, L.I.,
tekhnicheskiiy redaktor.

[Practical work in comparative physiology] Praktikum po sravnitel'noi
fiziologii. Moskva, Gos.izd-vo "Sovetskaya nauka," 1954. 547 p.
(Physiology, Comparative) (MLRA 8:4)

ANIKOVA, I. A.

"The Anatomy of the Anterior Facial Vein and Its Anastomoses."
Doklady Akad. Nauk SSSR, 1953. (Zhurnal, No 5, Mar 55)

XX: Dokl. Ak. Nauk SSSR, 1953, No 5--Survey of Scientific and Technical
Dissemination. Published at USSR Higher Educational Institutions (15)

YUSHINA, G.I., kand.med.nauk; AGZAMOV, R.A., kand.med.nauk; SHCHITOVA, N.N.,
vrach

Clinical, roentgenological, and morphological aspects of gonitis
tuberculosa. Med. zhur. Uzb. no.12:17-25 D '61. (MIRA 15:2)

1. Iz Uzbekskogo nauchno-issledovatel'skogo instituta tuberkuleza
(direktor - prof. Sh.A.Alimov) i Respublikanskogo detskogo kostno-
tuberkuleznogo sanatoriya imeni N.K.Krupskoy (glavnyy vrach -
Kh.I.Yusupova).

(KNEE TUBERCULOSIS)

SHCHITOVA, N.N.

Blood transfusion ~~in~~ osteoarticular tuberculosis in children.
Med. zhur. Uzb. no.12:76 D '61. (MIRA 15:2)

1. Iz Respublikanskogo detskogo kostnotuberkuleznogo sanatoriya
imeni N.K.Krupskoy (glavnyy vrach - Kh.I.Yasupova).
(BLOOD__TRANSFUSION) (BONES__TUBERCULOSIS)
(CHILDREN__DISEASES)

KALININ, . . . , Sov. Tekh. Nauk.

Electric Welding

Structural classification and comparative analysis of systems of automatic regulation of the process of electric arc welding. Izv. AN SSSR. Otd. tekhn. nauk No. 1, 1952.

9. MONTHLY LIST OF RUSSIAN ACQUISITIONS, Library of Congress, August 1952. Uncl.

SHCHITOVA, V.M.

USSR/Engineering - Welding, Automatic Control Jan 52

"Structural Classification and Comparative Analysis of the Systems for Automatic Regulation of Electric Arc Welding Process," G. M. Kasprzhak, V. M. Shchitova

"Iz Ak Nauk SSSR, Otdel Tekh Nauk" No 11, pp 41-66

Discusses principles of classification of methods for automatic regulation of elec power parameters in welding process and defines all structurally different classes, groups and types of simple and complex systems. Presents generalized schematic diagram which depicts all methods for automatic regulation of welding with fusible and infusible electrodes. Submitted by Acad V. P. Nikitin 19 Apr 51.

219T33

KASPRZHAK, G.M.; SHCHITOVA, V.M.

Some methods of studying linear systems with the aid of structural schemes,
Trudy Sekts. po nauch.razrab. probl. elektrosv. i elektroterm. AN SSSR no.1:
57 '53.

(MLBA 6:9)

(Electric welding)

SHCHITOVA V. M.

Shchitova V. M., "Periodic Fluctuations in Welding with a Fusing Electrode, and How to Stabilize Them," in the book, Avtomaticheskaya svarka No 2 (29) [Automatic Welding No 2 (29)], Kiev, Ukrainian SSR Academy of Sciences, 1953, Pages 35-52, 12 figures; bibliography, 9 items.

SHCHITOVA V. M.

Shchitova V. M. and Kasprzhak G. M., "Hook-up for Automatic Regulation of a Welding Arc with an Electro-mechanical Amplifier," Avtogennoe Delo [Autogenous Matters], 1953, No 4, Pages 10-12, 5 figures.

SHCHITOVA, V.M.

Periodical fluctuations in welding with melting electrodes and their
stabilization. Avtom.svar. 6 no.2:35-52 Mr-Ap '59. (MLRA 7:5)

1. Sektsiya elektrosvarki i elektrotermii Akademii nauk SSSR.
(Electric welding)

1. SHCHITOVA, V.M. KASPRZHAK, G.M.
2. USSR (600)
4. Electric Welding
7. Scheme for the automatic regulation of a welding arc with an electric amplifier,
V.M. Shchitova, G.M. Kasprzhak, Avtogradelo 24 no. 4, 1953.
9. Monthly List of Russian Accessions, Library of Congress, APRIL 1953, Uncl.

USSR/Engineering - Automatics

FD -1589

Card 1/1 : Pub. 41-10/18

Author : Shchitova, V. M. Moscow

Title : ~~_____~~
An equivalent transformation of structural diagrams of linear systems

Periodical : Izv. AN SSSR. Otd. tekhn. nauk 8, 95-100, Aug 1954

Abstract : Presents a method for equivalent transformation of structural diagrams of linear systems as an aid in finding the transfer functions describing the processes in the above-mentioned systems. Gives rules for equivalent transfer of unlike units which may be used in the study of systems represented by structural diagrams with crossing circuits. As an example of the use of equivalent transfer of units, describes the transformation of the structural diagram of automatic regulation in welding by 3-phase arc. Diagrams. Three references (all since 1952).

Institution :

Submitted : February 24, 1954

ШЧИТОВА, В.М.

USSR/Engineering - Welding devices

Card 1/1 Pub. 11 - 8/11

Authors : Shchitova, V. M.

Title : Selecting motors for automatic welding apparatus

Periodical : Avtom. svar. 3, 82-90, May-June 1955

Abstract : Methods of selecting electric motors for welding apparatus are discussed, and technical data is given on electrode and welding feeds and speeds, AC and DC low power motors, permissible tolerances in feed and speed changes, together with the calculation of disturbance forces in electrode feeds and welding. Six USSR references (1951-1953). Graphs; diagrams; tables.

Institution: Acad. of Sc., USSR, Laboratory of Electric Welding Machines

Submitted : December 2, 1954

SHCHITOVA, V.M., kandidat tekhnicheskikh nauk; LEBEDEV, A.M., inzhener.

Self-regulation of a three-phase arc in welding with a consumable electrode. Elektrichestvo no.7:51-57 J1 '56.

(MLRA 9:10)

1. Laboratoriya elektrosvarochnykh mashin AN SSSR (for Shchitova)
2. Institut metallurgii imeni A.A. Baykova AN SSSR (for Lebedev).
(Electric welding)

SHCHITOVA, V.M., kandidat tekhnicheskikh nauk.

Use of semiconductor rectifiers in welding. Elektrichestvo no.8:
89-90 Ag '56. (MLRA 9:10)
(Electric rectifiers) (Electric welding--Equipment and supplies)

RABINOVICH, Isaak Yakovlevich; BRATKOVA, O.N., kand. tekhn. nauk, retsenzent;
SHCHITOVA, V.M., kand. tekhn. nauk, red.; STEPANCHENKO, N.S., red.
idz-va; MODEL', B.I., tekhn. red.

[Equipment for electric arc welding; current sources] Oborudovanie
dlia dugovoi elektricheskoi svarki; istochniki pitania dugi.
Moskva, Gos. nauchno-tekhn. izd-vo mashinostroit. lit-ry, 1958.
380 p. (MIRA 11:10)

(Electric welding--Equipment and supplies)

AUTHORS: Shchitova, V.M. and Rabinovich, I.Ya. 125-1-7/15

TITLE: Problems of the Dynamics of D.C. Power Sources for Automatic Shielded-arc Welding (Voprosy dinamiki istochnika pitaniya pri avtomaticheskoy svarke v zashchitnykh gazakh)

PERIODICAL: Avtomaticheskaya Svarka, 1958, # 1, pp 43 - 47 (USSR)

ABSTRACT: Experimental and theoretical investigations carried out in the laboratory of electric welding machines of the USSR Academy of Sciences, show that the choice of circuits and shapes of the external characteristics of D.C. power sources must correspond to their dynamic properties. The following questions are outstanding in an analysis of the dynamics of a system consisting of a power source and an arc: 1) the investigation of transition processes in the power source during the short circuit in the electrode and the piece of work and a subsequent break of the circuit; 2) the analysis of stability and investigation of transition processes in a self-controlled system taking into account the inertness of the power source; 3) the investigation of the power source in a self-controlled system with periodic disturbances in the arc. The authors investigated the problems connected with the dynamics of power sources in automatic shielded-arc welding with fused electrodes and come to the following conclusions:

Card 1/3

125-1-7/15

Problems of the Dynamics of D.C. Power Sources for Automatic Shielded-arc
welding

intensity of automatic control.

There are 2 figures and 3 Russian references.

ASSOCIATION: The Section of Power Sources and Automation of TsNIL Electrom
(Otdel istochnikov pitaniya i avtomatizatsii TsNIL-Elektrom)
of the USSR Academy of Sciences.

SUBMITTED: 2 April, 1957.

AVAILABLE: Library of Congress

Card 3/3

28(1) PHASE I BOOK EXPLOITATION. SOV/2156

Sovesheniye po kompleksoy mekhanizatsii i avtomatizatsii tekhnologicheskikh protsessov. 2nd, 1956.

Avtomatizatsiya mashinostroitel'nykh protsessov: /trudy soveshchaniya/, tom. 1: Goryachaya obrabotka metallov (Automation of Machine-Building Processes: Proceedings of the Conference on Over-All Mechanization and Automation of Technological Processes, Vol. 1: Hot Metal-Forming) Moscow, 1959. 394 p. 5,000 copies printed.

Sponsoring Agency: Akademiya nauk SSSR. Institut mashinovedeniya. Komissiya po tekhnologii mashinostroyeniya.

Resp. Ed.: V.I. Dikushin, Academician; Compiler: V.M. Raskatov; Ed. of Publishing House: V.A. Kostov; Tech. Ed.: I.P. Kuz'min.

PURPOSE: The book is intended for mechanical engineers and metallurgists.

COVERAGE: The transactions of the Second Conference on the Over-All Mechanization and Automation of Industrial Processes, September 22-29, 1956, have been published in three volumes. This book, Vol. 1, contains articles under the general title, Hot Working of Metals. The investigations described in the book were conducted by the Sections of the following institutions: P.N. Aksentov, D.P. Ivanov and G.M. Orlov; forming; Tselikov, A.D. Tomlenov and V.T. Mashcherin; welding - G.A. Nikolayev, E.I. Prolov and G.A. Maslov. There are 183 references: 112 Soviet, 34 English, 6 German, and 1 French.

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| Semenov, A.P. Seizing of Metals and Utilization of this Phenomenon | 385 |
| Aybinder, S.B. Cold Welding of Metals | |
| AVAILABLE: Library of Congress | |

Card 8/8

TM/ajt
9/15/59

SOV/125-12-2-3/14

18(5)

AUTHOR: Shchitova, V.M.

TITLE: The Dynamics of a Process for the Self-Regulation of a Welding Arc with an Inertial Feed Source (Dinamika protsessy samoregulirovaniya svarochnoy dugi s inertsionnym istochnikom pitaniya)

PERIODICAL: Avtomaticheskaya svarka, 1959, Vol 12, Nr 2, pp 28-38 (USSR)

ABSTRACT: The article demonstrates that in a number of cases the qualitative and quantitative evaluation of the process of self-regulation may be changed, by taking into account the inertia of the generator. A comparison of the transitional processes in the self-regulating system, taking into account the dynamo properties of the generator, presents some difficulty due to the high order of the characteristic equations. Consequently it is interesting to know when to ignore the dynamic properties of the feed source and in what cases this would lead to major errors of calculation. The article then discusses system stabil-

Card 1/3

SOV/125-12-2-3/14

The Dynamics of a Process for the Self-Regulation of a Welding Arc
with an Inertial Feed Source

ity, and shows that the conditions for system stability with a non-inertial feed source and with a generator may be materially different. Secondly, with a non-inertial feed source the limit condition for stable working of the system is equality of the rigidity coefficients of the static characteristics of the arc and of the feed source. Thirdly mutual induction between the excitation windings of the generator alters the stability conditions for the system. The article deals with the calculation of transitional processes, for welding with flux, in an atmosphere of protective gas, the arc being supplied by a GS-500 generator. It concludes that the dynamic properties of the feed source may materially influence the quality of transitional processes in the self-regulating system in cases where the system feed source arc is near to the limit of stable equilibrium. Secondly the computation of transitional processes, without taking into account the generator's inertia, is possible when the duration of the transitional processes in the self-regu-

Card 2/3

SOV/155-15-1-8/14

The Dynamics of a Process for the Self-Regulation of a Welding Arc
with an Inertial Feed Source

lating system considerably exceeds the time of transitional process in the generator, and in the link of the system feed source-arc. Thirdly mutual induction between the independent and consecutive winding of the welding generator influences the stability reserve of the system. Finally, when welding in protective gases, acceleration of self-regulation by increasing the strength of the external characteristics of the feed source is possible, mainly where current strength is relatively low. When it is relatively high, the external characteristics do not materially influence the dynamics of self-regulation. There are 1 circuit diagram, 5 equations, 2 tables, 13 graphs and 4 Soviet references.

ASSOCIATION: Tsentral'naya nauchno-issledovatel'skaya laboratoriya elektricheskoy obrabotki materialov AN SSSR (Central Scientific-Research Laboratory for Electrical Processing of Materials of the AN USSR)

SUBMITTED: September 18, 1958
Card 3/3

SLEPUSHKIN, Ye.I.; SHCHITOVA, V.M.; MAKEYEV, I.F.

Line diagrams of magnetoelastic pressure transducers, Izv.
tekh. no.9:16-20 S '63. (MIR. 17:1)

SLEPUSHKIN, Ye.I.; BURDIN, V.M.; KRAYUSHKIN, S.V.; MOLGACHEV, D.A.;
Prinimali uchastiye: MAKEYEV, I.F., SHCHITOVA, V.M.

Experimental investigation of magnetoelastic dynamometers used
in measuring metal pressure on rolling-mill rolls. Sbor. trud
TSNIICHM no.30:129-135 '63. (MIRA 16:10)

(Dynamometer)

SHCHITOVA, V.M.; SLEPUSHKIN, Ye.I.

Using structural networks for determining transfer functions
taking nonzero initial conditions into consideration. Sbor.
trud TSNIICHM no.30:145-149 '63. (MIRA 16:10)

(Automatic control)

SHCHITOV, V.M.

Improvement of EPChG-type electric clocks. Avtom., telen.
i sviaz' 9 no.10:33 0 '65. (MIRA 18:11)

1. Glavnyy inzh. sluzhby signalizatsii i svyazi Lenin-
gradskogo metropolitena.

SECHITOVA, V.M. (Moskva); LIL'DENKIN, Ya.I. (Moskva); DUBASCH, B.Ye. (Moskva)

Analysis of a self-regulation process in electrochemical treatment of materials. Elektrichestvo no.11:29-35 N '65.

(MIRA 18:11)

PHASE I BOOK EXPLOITATION

50V/5186

Akademiya nauk SSSR, Tsentral'naya nauchno-issledovatel'skaya laboratoriya elektricheskoy obrabotki materialov

Problemy elektricheskoy obrabotki materialov (Problems of the Electrical Machining of Materials) Moscow, Izd-vo AN SSSR, 1960. 247 p. Errata slip inserted. 4,200 copies printed. (Series: Itsi: Trudy)

Sponsoring Agency: Akademiya nauk SSSR. Resp. Ed.: B. R. Lazarenko; Ed. of Publishing House: M. L. Podgoryetkiy; Tech. Ed.: S. P. Golub'.

PURPOSE: This collection of articles is intended for scientists and technicians concerned with the investigation of new ways of applying electrical energy.

COVERAGE: The book contains articles on studies carried out by the staff of the Tsentral'naya nauchno-issledovatel'skaya

Problems of the Electrical (cont.)

50V/5186

laboratoriya elektricheskoy obrabotki materialov Akademiya nauk SSSR (Tsentral'naya nauchno-issledovatel'skaya laboratoriya elektricheskoy obrabotki materialov of the AN USSR) in searching for new applications of electrical energy. The results of these studies include: the electrical machining of electrical and the utilization of electrical pulsed discharges in carrying out certain chemical reactions, new methods of processing of metal surfaces and the application of electrical energy in welding of metals, and data on the technological processes in metal machining by electric current pulses. Much attention is paid to the analysis of the operation of power-supply sources used in the electrical machining and arc welding of metals. No personalities are mentioned. References accompany most Systems of Spark Installations

132

Knyazev, A. I. Requirements of Generators and Generator Circuits for Electric-Spark Machining of Metals with a Capacitive Energy-Storing Device

152

Shchegolev, V. M., Ye. I. Slepukhin, and Z. M. Shil'man. Investigation of Automatic Control Systems and Power Supply Sources During Electrical-Erosion Cutting of Metals by a Disk Electrode

188

Adyan, A. G., and V. M. Kolesnikov. Investigation of Relaxation-Generator Circuits for the Power Supply of Spark Installations

215

Zolotarev, B. N. Concerning the Computation of the Technological Characteristics of a Dimensional Electric-Spark

221

Machining Process of Current-Carrying Materials

221

Kozlov, A. S., and A. V. Plakunov. Some Technological Data on the Operation of a Machine Pulse-Generator During the Machining of Special Alloys

233

Lazarenko, B. R. Universal Laboratory Stand

244

AVAILABLE: Library of Congress

Card 6/6

JP/AR/ac
5-25-61

SHCHITOVA, Ye. P.

Analysis and prospects for the use of electric centrifugal submerged pumps in the Bashkir and Tatar oil fields. Trudy Akad. neft. prom. no. 2: 230-250 '55. (MLRA 8:5)
(Bashkiria--Oil well pumps) (Tatar A.S.S.R.--Oil well pumps)

~~SH~~ SHCHITZINSKIY, B.

POLATY/Organic Chemistry, Synthetic Organic Chemistry.

E-2

Abs Jour: Ref Zhur-Khimiya No 6, 1957, 19076.

Author : Urbanskiy T., Shchitzinskiy B.

Inst :

Title : Acetylation of bis-(2-oxymethyl-2-nitro)butylamine.

Orig Pub: Byul. Pol'skoily AN. 1956, Otd. 3,4, No 4, 221-222

Abstract: Through acetylation by means of $(CH_3CO)_2ONHCH_2C$
 $(NO_2)(CH_2OH)CH_2CH_3$ 2 (I) obtained previously at the
hydrolysis of 5-ethyl-5-nitro-3-(2-oxymethyl-2-nitro-
butyl)-tetrahydro-1,3-oxazine (II) (J. Amer. Chem. Soc.,
1947, 69,924), a triacetyl derivative of I, (III)
is obtained; at the hydrolysis of III in an aqueous
sol. of NaOH in the presence of acetone at 0° accord-
ing to the method described before (J. Amer. Chem. Soc.,
1936, 58, 490), all the acetyl groups are saponified.
On the aqueous sol. I HCl act CH_3COONa (IV) (heating

Card : 1/2

S/05A/62/000/001/010/011
2121/2178

AUTHORS:

Shchekarev, S. A., Vasil'kova, I. V., Kozol'kov, D. V.,
Nikol'skiy, S. S.

TITLE:

Thermodynamic study of molybdenum dibromide

IDENTIFIERS:

Leningrad. Universitet. Vestnik. Seriya fiziki i khimii,
no. 1, 1962, 148-153

ABSTRACT: The actual isobaric specific heat of solid molybdenum dibromide and the temperature dependence of entropy, enthalpy, and free energy of formation of solid MoBr_2 were calculated. In addition the thermal stability of MoBr_2 was studied. MoBr_2 was diluted, after bromination of metallic molybdenum in bromine vapor, with an inert gas at 600-700°C. The isobaric specific heat was determined in a calorimetric apparatus with a sensitivity of 0.00005°C. When solid MoBr_2 is heated to 800°C in a vacuum no melting occurs, and there is disproportionation which mainly follows the equation $\text{MoBr}_2(\text{solid}) \rightarrow 1/3 \text{ Mo}(\text{KR}) + \text{MoBr}_3(\text{g})$. The values for enthalpy, entropy, and free energy obtained in solid MoBr_2 formation are as follows:

Card 1/3

S/054/62/000/001/010/011
B121/B136

Thermodynamic study of molybdenum ...

$$= 62.4 \text{ kcal/mole}$$

$$\Delta H_{298}^{\circ} \text{ formation MoBr}_2(\text{solid}) = -31.4 \text{ e.u.}$$

$$\Delta S_{298}^{\circ} \text{ formation MoBr}_2 = -53.0 \text{ kcal/mole.}$$

$$\Delta F_{298}^{\circ} \text{ formation MoBr}_2(\text{solid})$$

The temperature dependence of the specific heat of solid MoBr₂ from 196-773°K is expressed by the equation

$$\Delta C_p^{\circ} \text{ MoBr}_2 \text{ formation (solid)} = -5.80 + 30.2 \cdot 10^{-3} T + 0.63 \cdot 10^{-5} T^{-2} \text{ cal/mole} \cdot \text{deg}$$

The temperature dependence of the actual specific heat of some chemically resistant glasses such as pyrex, pyrex chemical resistant glass and the chemically resistant Russian glass type П-15 (P-15) studied and the following values were obtained: for pyrex $C_p = 0.174 + 3.60 \cdot 10^{-4} \text{ cal/g of degrees t}$; for pyrex chemical resistant glass $C_p = 0.178 + 3.13 \cdot 10^{-4} \text{ cal/g} \cdot \text{degrees t}$, and for P-15 glass $C_p = 0.181 + 2.09 \cdot 10^{-4} \text{ cal/g} \cdot \text{degrees t}$. There are 2 figures, 2 tables, and 7 references: 3 Soviet and 4 non-Soviet. The three references to Card 2/3

00001548920

SHCHODRO, V. Ye.

KANTSSEL', Ya.O., inzhener; SHCHODRO, V.Ye., inzhener.

Determining the life span of building machinery parts. Mekh.
stroi. 11 no.8:13-16 Ag '54. (MIRA 7:8)
(Building machinery)

SHCHOGLYAYEV, A. .

PA 18T21

USSR/Turbines - Controls
Turbines, Steam

Aug 1947

"Turbine Regulation in Systems with Double Intensification." A. V. Shchoglyayev, Steam Turbine Laboratory of the VTI, 7 pp

"Izvestiya VTI" No 8 (148)

Presents graphs and formulae for determining the deviation of the number of revolutions of the turbine as a result of sudden changes of load.

18T21

SHCHOGOLEV, G.M. [Shchogolev, G.M.], hand. text in hand

Astrai fuel for humanity. Nauka i zhytie 11 no.12:5-7 D '61.
(MIRA 15.2)

1. Direktor Instituta teploenergetiki AN USSR.
(Power resources)

SHCHOGOLEV, G.M. [Shchoholiev, H.M.]; BELOKON', S.M. [Bilokon', S.M.]

Some problems of the semicoking of gas coals with a solid heat
exchanger. Zbir. prats' Inst. tepl. AN URSR no.25:9-15 '62.
(MIRA 17:1)

SHCHOLIV, V.N.

New system for cleaning sugar beets from impurities. Khar.prom.
no.4:30-33 O-D '62. (MIRA 16:1)
(Sugar beets—Cleaning)

SHCHOGOLIV, V. M. [Shchogoliv, V. M.]

Methods for increasing the corrosion resistance of metals in
diffuser units. Khar. prom. no. 1:33-40 Ja-Mr '63.

(MIRA 16:4)

(Diffuser—Corrosion)

SHCHOGOLEVA, I.V. [Shchoholieva, I.V.]

"Investigation of the pathogenesis of arterial hypertension" by
[doktor med.nauk] M.I.Gurevich. Reviewed by Shchoholieva. Fiziol.
zhur. [Ukr.] 7 no.2:286-287 Mr-Apr '61. (MIRA 14:4)
(HYPERTENSION) (GUREVICH, M.I.)

ACCESSION NR: AR4015490

S/0169/63/000/012/G006/G006

SOURCE: RZh. Geofizika, Abs. 12G43

AUTHOR: Spitsy*n, Yu. G.; Shchors, M. D.

TITLE: Resonance method of determining the modulus of elasticity and Poisson's coefficient for rock

CITED SOURCE: Sb. Krepleniye ochistn. i podgotovit. vy*rabotok. (DonUGI, no. 26) M., 1962, 131-134

TOPIC TAGS: resonance method, Poisson's coefficient, modulus of elasticity, physico-mechanical rock properties, ZG-12 sine-wave sound generator, EO-7 electronic oscillograph, plate piezoelectric pickups

TRANSLATION: The speed of propagation of waves of extension is determined for finding the elastic characteristics of rock. Knowing the speed it is possible to find the modulus of elasticity and Poisson's coefficient. Measurement of the natural frequency of vibrations in samples is made using a sine-wave sound generator (ZG-12), an electronic oscillograph (EO-7) and plate piezoelectric pickup units made of barium titanate ceramics. For determining the form of resonance during the

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ACCESSION NR: AR4015490

measurements an adaptive-type piezoelectric pickup was used. The results of the measurements showed that the resonance method in combination with the seismoacoustical method can make it possible to judge the physico-mechanical properties of samples according to deformation in them, and it is possible to recommend it for laboratory research on physico-mechanical properties of rock.

DATE ACQ: 09Jan64

SUB CODE: AS, PH

ENCL: 00

Card 2/2

USSR/Cultivated Plants. Technical Plants. Oil and Sugar Bearing Plants.

Abstr Jour : Ref Zhur-Biol., No 15, 1958, 68296

Author : Taran, E. S., Savenko, L. A., Shehova, V. I.
Inst : Kirovograd St. t. Agricultural Experiment Sta-
tion.
Title : The Selection and Seed Cultivation of Oil Flax.

Orig. Pub : V sh.: Kratkiye itogi raboty (Kirovogradsk.
gos. s.-kh. opyt. st.) za 1931-1955 gg. No 1,
Kiev, 1957, 119-129

Abstract : Here, hybridization methods with fertilization
selectivity were used. The best strains selected
throughout the nation, as well as by the All-
Union Institute of Plant Cultivation were used
in crossbreedings. Individual selection was based

Card : 1/3

USSR/Cultivated Plants. Technical Plants. Oil and H
Sugar Bearing Plants.

Abs Jour : Ref Zhur-Biol., No 15, 1958, 66296

on hybrid populations of the first and subsequent populations, on seedlings of selected plants, and on prospective strains. The Kirovogradskiy 71 strain, whose yield usually exceeds the yield of standard strains, such as the Voronezhskiy 1308 strain, was obtained by uniting the best seeds of strains which were developed at the Voronezh and Don experiment stations; and then by crossbreeding within this artificial population. The strain has been distributed throughout the Cherkassk and Kirovograd Oblast's. Also, the drought-resistant Kirovogradskiy 4 strain, which appears to have good prospects, was developed. In seed cultivation, pri-

Card : 2/3

USSR/Czechoslovak Plants - Technical, Biological, Sacchariferous. 11-7
 Abstr Jour : Ref Zhur - Biol., No 8, 1958, 39444
 Author : Stefanov, V.I.
 Inst : Kirovograd State Agricultural Experiment Station.
 Title : Genetic Variation.
 Orig Pub : Kharkiv. Izv. vuzov (Kirovogradsk. gos. s.-h. univ.)
 no) za 1931-1935 sp. vyp. 1, Kiev, 1957, 139-141.
 Abstract : No abstract.

Card 1/1

- 125 -

Country : BULGARIA
 APPROVED FOR RELEASE: 08/23/2000
 Artificial and Synthetic Fibers
 Abstr Jour : Ref Zhur-khim, 1959, No 7, 25688
 Author : Sach"rbanov, Khr.
 Institut : -----
 Title : New Materials From the Artificial Protein Fiber
"Kobolon"
 Orig. Pub. : Leka promishlenost. Tekstil, 1958, 7, No 4,
12-13
 Abstract : No abstract.

Card: 1/1

11-1146

SHCHTABNITSKIY, S.S.; TSIFRINOVICH, A.Z., redaktor; KRASIL'SHCHIK, S.I.,
redaktor; TOKER, A.M., tekhnicheskiy redaktor

[Booklet of safety measures for foremen participating in the
erection of steel constructions] Pamiatka po tekhnike bezopasnosti
dlya masterov po montazhu stal'nykh konstruktsii. Moskva, Gos.
izd-vo lit-ry po stroit. i arkhitekture, 1954. 35 p. (MLRA 7:9)

1. Russia (1923- U.S.S.R.) Ministerstvo stroitel'stva SSSR.
Otdel tekhniki bezopasnosti i promyshlennoy sanitarii.
(Building, Iron and steel--Safety measures)

SHCHUCHINSKIY, L.G.; AVAKYAN, S.; KAYDANOVSKIY, L.

Magnetographic method of control of welded pipe joints. Zav.
lab. 30 no.1:117 '64. (MIRA 17:9)

ACCESSION NR: AR4028218

S/0274/64/000/002/A047/A047

SOURCE: RZh. Radiotekhnika i elektrosvyaz', Abs. 2A302

AUTHORS: Shchubarin, Yu. V.; Gorobets, N. N.

TITLE: Polarization structure of the field radiated from the open end of a round waveguide or conical horn excited by H_{11} wave

CITED SOURCE: Uch. zap. Khar'kovsk. un-t, v. 132, 1962, Tr. radiofiz. fak., v. 7, 42-49

TOPIC TAGS: waveguide antenna, horn antenna, field polarization, H_{11} mode, Kirchhoff integral, principal radiation lobe

TRANSLATION: The polarization structure is calculated for the field radiated from the open end of a round waveguide and a conical horn excited a linearly polarized H_{11} wave. The differential equation of the projections of the electric force lines in a hemisphere of large

Card 1/2

ACCESSION NR: AR4028218

radius is obtained with the aid of the vectorized Kirchhoff integral. The results of the approximate integration of this equation and a theoretical analysis lead to the following conclusions: The polarization structure of the field radiated from the open end of a round waveguide is in general similar to the structure of the H_{11} mode field inside the waveguide. Within the width of the principal lobe relative to the E_θ component, the vector \vec{E} lies approximately in a vertical plane, and the force lines are approximately parallel to one another. In the vertical plane, the parallel nature of E is fairly well maintained up to a level $0.5 E_{\theta \text{ max}}$. In the case of a round waveguide, the calculated data have been well confirmed by experiment. 6 illustrations. Bibliography, 4 titles. S. P.

DATE ACQ: 30Mar64

SUB CODE: GE, SD

ENCL: 00

Card 2/2

SHCHUCHINSKIY, Ya. M.

Influence of electric field on thermoelectronic emission of antimony-cesium cathode. V. N. Lepeshinskaya and Ya. M. Shchuchinskiy. *Trudy Leningrad. Politekh. Inst.* No. 181, 183-6. The expts. performed by using an Sb-Cs cathode showed a direct relation between $\log I$ and \sqrt{E} indicating that the results agree with Schottky's effect for metals. V. S. M.

BA

OR MT //

21588

S/109/60/005/010/011/031

E032/E114

26. Y131

AUTHORS: Bronshteyn, I.M., and Shchuchinskiy, Ya.M.

TITLE: Energy spectrum of slow secondary electrons from barium adsorbed on tungsten

PERIODICAL: Radiotekhnika i elektronika, Vol.5, No.10, 1960, pp. 1650-1657

TEXT: This paper was first read at the 9th All-Union Conference on Cathode Electronics in Moscow, October 1959. The aim of the present work was to investigate the effect of changes in the work function on the energy spectrum of slow secondary electrons emitted during the adsorption of barium on tungsten. The measurements were carried out with the aid of the apparatus shown in Fig.1. In this figure, M is the target, K is the collector, C is a grid, \mathfrak{E}_1 is an electron gun, \mathfrak{E}_2 is an electron gun used in the determination of the change in the work function of the target, and $M\bar{A}$ are molecular beam sources. The barium layers were deposited on to the target outside the spherical container so that the surface of the collector K remained the same throughout. The spherical part of the instrument

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E032/E114

Energy spectrum of slow secondary electrons from barium adsorbed on tungsten

was placed between Helmholtz coils which were used to ensure that there was no magnetic field in the region of the spherical bulb. The grid C was used to suppress tertiary electrons. The electron gun \mathcal{B}_1 produced a well-focussed beam of primary electrons in the energy range 20-3000 eV. The second electron gun is similar to that described by the present authors in Ref.6 and gave a well-focussed slow electron beam (6-10 eV). The work function of the target was measured by the Anderson method (Ref.7: Phys.Rev., 1935, 47, 958) from the displacement of the volt/ampere curves. The molecular beam sources were used to evaporate the barium layers on to the target. The latter was cylindrical in form and was made of tantalum (diameter 15 mm, length 10 mm). The cylinder was terminated at its lower end in a tungsten wall (0.1 mm). This wall was in the form of a section of a sphere (height 2 mm). The target was fixed at the end of a molybdenum rod and its position was adjustable. All the measurements were carried out in vacuum produced by two mercury diffusion pumps

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Energy spectrum of slow secondary... E032/E114

isolated by three liquid oxygen traps. In addition, a titanium pump was incorporated in the apparatus. The instrument was first outgased for 4-7 days both by baking and electron bombardment. The final vacuum was 10^{-8} mm Hg. The secondary electron distribution curve was determined in 20-30 sec so that the barium layer could not become contaminated by residual gas atoms (time of adsorption of a monolayer of residual gas was estimated at 200 sec). The secondary emission coefficient was measured with the aid of two galvanometers (10-10 amp/mm). One of them was used to obtain the volt/ampere curves in order to determine the change in the work function of the target. The secondary electron energy distributions were exhibited on an oscillograph screen with preliminary differentiation of the signal. The energy distribution curves were obtained for various barium deposits between 0.3 and 10 atomic layers thick. It was shown that the form of the energy distribution curve depends on the thickness of the barium layer. Instead of the one-maximum characteristic of pure tungsten, two maxima appear. It is suggested that one of these (at about 3.1 eV) is due to secondary electrons from the tungsten base and the second is due to

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Energy spectrum of slow secondary

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the barium layer. The tungsten maximum disappears when the barium deposit reaches a thickness of 10 atomic layers. The position of the maximum due to barium is well accounted for by the theory of N.L. Yasnopol'skiy and G.A. Tyagunov (Ref.4) and A.Ye. Kadyshevich (Ref.5). It is clear from the distributions obtained that as the work function decreases the maximum due to barium moves towards lower energies. The position of the maximum of the curves remains roughly unaltered for deposits thicker than about 2 atomic layers (the maximum occurs at between 1.6 and 1.7 eV). The peak disappears altogether for layers in excess of 10 atomic layers. Acknowledgements are expressed to M.L. Kapitsa for his advice. There are 9 figures, 2 tables and 12 references; 10 Soviet and 2 English.

SUBMITTED: December 21, 1959

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BRONSHTEYN, I.M.; SHCHUCHINSKIY, Ya.M.

Energy spectrum of slow secondary electrons in the adsorption of
Be on W. Radiotekh. i elektronika no.4:670 Ap '61. (MIRA 14:3)
(Secondary electron emission)(Beryllium)(Tungsten)

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B104/3166

9.2120 2. 1112
2. 1112

AUTHORS: Bronshteyn, I. M., Shekuchinskiy, Ya. M.

TITLE: Effect of the work function on the secondary electron emission of metals

SOURCE: Leningrad. Gornyy institut. Zapiski. v. 37, no. 3. Moscow, 1961. Matematika, fizika. 98 - 104

TEXT: A study is made of the effects due to the work function of the target (tungsten), being changed by the adsorption of barium layers of different thicknesses, these effects influencing the secondary electron emission coefficient and the velocity distribution of the secondary electrons. The experimental arrangement (Fig. 1) comprised two parts: a spherical capacitor in which the measurements were made and a long tube with molecular and electron guns for measuring the work function by the method of P. A. Anderson (Phys. Rev., 1935, no. 47, p. 958). The target was a cylindrical Ta case (10 mm high and of 15 mm diameter), whose lower bottom was made of tungsten foil (0.1 mm thick). The target was accurately adjusted above the molecular guns or the two electron guns with the aid of a magnet. The energy distribution of the secondary electrons was

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Effect of the work function on ...

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measured by a differentiation circuit. At a pressure of $\sim 10^{-8}$ mm Hg the volt-ampere characteristics of the W -target with barium layers of different thicknesses (Fig. 6) and the secondary-electron energy distribution (Table) were recorded. As can be seen, the maximum of the energy distribution is shifted in the direction of lower energies if the work function is reduced, and vice versa. There are 7 figures and 1 table.

Fig. 1. Experimental arrangement. Legend: (Θ -1) and (Θ -2) electron guns; (M) molecular guns; (T) target.

Fig. 6. Volt-ampere characteristics. Legend: (1) $\Theta = 0$; (2) $\Theta = 0.4$; (3) $\Theta = 0.5$; (4) $\Theta = 0.7$; (5) $\Theta = 1.3$; (6) $\Theta = 1.5$ atomic layers.

Table. Results of analysis. Legend: (1) sputtering time; (2) number of barium layers; (3) changes in the work function, in eV; (4) position of the maximum, in eV.

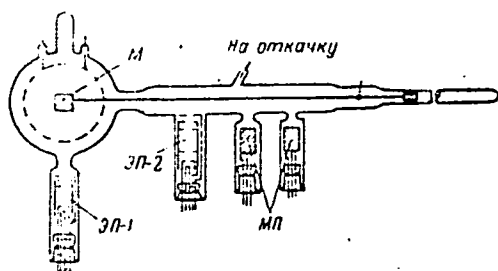
Table

| (1) | (2) | (3) | (4) |
|--------------|------|-----|-----|
| 0 | 0 | 0 | 3.1 |
| 30 сек | 0.4 | 1 | 2 |
| 40 сек | 0.5 | 1.7 | 1.8 |
| 1 мин | 0.7 | 2.8 | 1.2 |
| 1 мин 30 сек | 1.1 | 2 | 1.3 |
| 15 мин | > 10 | 2 | 1.7 |

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Effect of the work function on ...

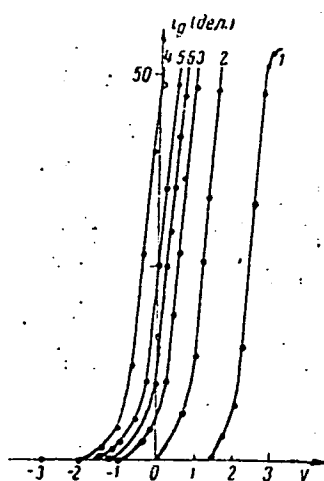
Fig. 1



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Fig. 6



26.2312
9.3120 (1138, 1160, 1331)

3h2h7
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B102/B138

AUTHORS: Bronshteyn, I. M., and Shchuchinskiy, Ya. M.

TITLE: Secondary electron emission from potassium and calcium

PERIODICAL: Fizika tverdogo tela, v. 4, no. 2, 1962, 552 - 553

TEXT: The dependence of the coefficient of secondary electron emission on the primary electron energy, $\sigma(E_p)$, was measured for K and Ca. For K the components $\delta(E_p)$ and $\eta(E_p)$ were also determined ($\sigma = \delta + \eta$; δ is the coefficient of true secondary emission of slow electrons, and η is that of inelastically reflected electrons). A spherical capacitor with anti-dynatron grid was used for the measurements. Ca was evaporated from Ta and K from a glass ampoule. The collector (grid) diameter was 80 mm. The measurements were made immediately after condensing the K or Ca onto the tungsten backing; the curves obtained were found to be well reproducible. For K, σ_{\max} was 0.53 at $E_p = 175$ ev, for Ca, $\sigma_{\max} = 0.6$ at $E_p = 200$ ev. ix
There are 1 figure and 6 Soviet references.

Card (1/2)

secondary electron emission...

34247
S/181/62/004/002/042/051
B102/B138

ASSOCIATION: Gornyy institut im. G. V. Plekhanova Leningrad (Mining
Institute imeni G. V. Plekhanov, Leningrad)

SUBMITTED: October 30, 1961

Fig. $\sigma(E_p)$, $\eta(E_p)$ and $\delta(E_p)$ for K and $\sigma(E_p)$ for Ca.
dashed line: $\sigma(E_p)$ for K, old measurements (1941).

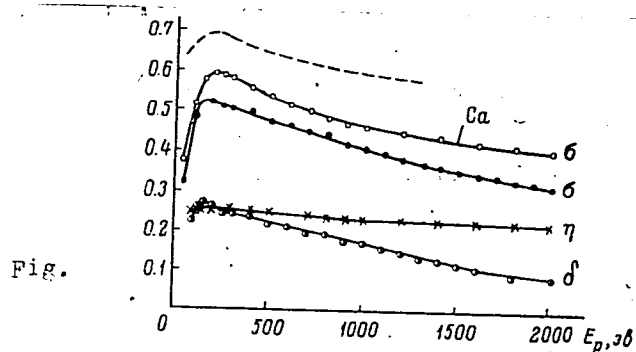


Fig.

35775

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D230/D308

26 2253

26 2312

AUTHORS: Bronshteyn, I.M., and Shchuchinskiy, Ya.M.

TITLE: The influence of the work function on the secondary electron emission of metals

PERIODICAL: Referativnyy zhurnal. Avtomatika i radioelektronika, no. 5, 1962, 44, abstract 5zh300 (Zap. Leningr. gorn. in-ta, 1959 (1961), 37, no. 3, 98-104)

ABST: The coefficient of the secondary electron emission σ and the energy distribution of the secondary electrons were measured in a spherical condenser device; the target was Ta and its work function could be varied within the limits of 2.8 eV by covering it with layers of Ba of different thicknesses. It was established that, with decrease of the surface work function, the maximum of the curve of energy distribution of secondary electrons is displaced towards lower energies; this agrees with previous results of theoretical investigation of secondary emission (Kadyshevich, A.E. Zh. eksperim. i teor. fiz. 1945, no. 15, 600). [Abstractor's note: Complete translation].

Card 1/1

40640

S/139/62/000/004/017/018
E039/E420

9.3/20
26.2531 (also 3016)

AUTHORS: Bronshteyn, I.M., Shchuchinskiy, Ya.M.

TITLE: The energy spectrum of slow secondary electrons by adsorption for thin layers of silicon and platinum on beryllium

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Fizika, no.4, 1962, 182 + .1 plate

TEXT: The apparatus, technique and experimental method were previously described by the present authors (Radiotekhnika i elektronika, v.5, 1960, #1650). It is shown that with an increase in the degree of covering θ (θ is the number of atomic layers) the shape of the spectrum and the position of its maximum changes until $\theta \approx 2$ both for silicon and platinum. For silicon the maximum in the energy distribution curve (0 to 10 eV) occurs at 2.3 to 2.4 eV and for platinum (0 to 15 eV) at 3.3 eV. The form of the energy spectrum at $\theta \approx 10$ for silicon corresponds to that of silicon itself. Similarly it is shown that for $\theta \approx 2$ the emissive power of platinum on beryllium is determined almost entirely by the parts covered with platinum. The position of the Card 1/2

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34459
S/109/62/007/002/024/024
D256/D303

26.2312
24.7702(1160, 1164, 1385)

AUTHOR: Bronshteyn, I.M., and Shchuchinskiy, Ya.M.
TITLE: Energy spectrum of slow secondary electrons accompanying barium absorption by silicon and beryllium
PERIODICAL: Radiotekhnika i elektronika, v. 7, no. 2, 1962, 356 - 359

TEXT: The study was conducted in order to verify and supplement the authors' previous work (Ref. 1: Radiotekhnika i elektronika, v. 5, no. 10, 1960, 1650) where two groups of slow secondary electrons were observed in evaporation of thin layers of barium upon a tungsten backing. The results, however, were difficult to interpret owing to the fact that the electron inelastic scattering coeffs. η for barium and tungsten are too close to each other, and for this reason elements with widely differing η and secondary electron emission coeff. σ were chosen for the present investigation, the experimental method being identical to that reported previously. The results are presented in a form of $\sigma(E_p)$ and $\sigma(\theta)$ curves as well as

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